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1 AUG 1974

MEMORANDUM FOR: All ADP Control Officers
All Component Logistics Officers
All Component Security Officers

VIA: Chief, Management Staff, ODP

FROM: Chief
Information Systems Security Group, OS

SUBJECT: Security Considerations in the Release of ADP
Equipment

REFERENCE: "Intelligence Community Policy for the Release
of Magnetic Storage Media" (attached)

1. The purpose of this memorandum is to alert Agency personnel that the Office of Security is concerned that excess ADP equipment, including word processing systems, could be released from component control without properly ensuring that all residual memory has been sanitized. The referenced Intelligence Community Policy, effective 13 March 1974, states that:

"...Due to the physical properties and retentive capabilities of magnetic media and devices (e.g., cores drums, discs, tapes) used to store, record or manipulate classified data in a computer system, special precautions must be taken in the release of such media to safeguard possible residual classified information until adequate sanitization procedures described below have been executed..."

2. The Information Systems Security Group (ISSG), Office of Security requires that appropriate sanitization procedures are formally implemented and verified by the Component ADP Control Officer or Component Security Officer prior to ADP equipment, including word processing systems, being released from component control. This requirement applies, but is not limited to, ADP equipment being released for the following reasons:

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- Reassignment of excess equipment to another Agency component via the excess equipment program.

- Release of excess equipment to the General Services Administration (GSA) for reutilization by another U. S. Government agency or for disposal.

- Return of leased/rented equipment to a vendor.

- Return of U. S. Government-owned equipment to an original vendor.

- Loan of equipment to another Agency component or U. S. Government agency.

3. The referenced Intelligence Community Policy details specific procedures for implementing and verifying the sanitization of excess ADP equipment.

4. All Property Turn In (PTI) documents which list ADP equipment with magnetic memory media require a statement and a signature by the Component ADP Control Officer or Component Security Officer certifying that all magnetic media has been sanitized and verified in accordance with the referenced Intelligence Community Policy.

5. Any specific questions regarding this requirement should be directed to the Information Systems Security Group on extension

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INTELLIGENCE COMMUNITY POLICY FOR THE RELEASE OF MAGNETIC STORAGE MEDIA

(Effective 13 March 1974)

PURPOSE

1. To establish policy guidance and uniform sanitization and declassification procedures for releasing magnetic media used to store classified intelligence data, including sensitive compartmented information.* To identify factors for consideration in evaluating the degree of risk associated with release of such media.

GENERAL

2. Due to the physical properties and retentive capabilities of magnetic media and devices (e.g., cores, drums, discs, tapes) used to store, record, or manipulate classified data in a computer system, special precautions must be taken in the release of such media to safeguard possible residual classified information until adequate sanitization procedures described below have been executed.

APPLICABILITY

3. The procedures outlined in this paper are equally applicable within the USIB Community, and to contractor and non-USIB government use of magnetic storage media, where such media are used to store classified intelligence information, including sensitive compartmented information.

4. Nothing in this policy shall supersede or augment the requirements on the control, use, and dissemination of "Restricted Data" or "Formerly Restricted Data" as defined in Section II, Atomic Energy Act of 1954, as amended. However, this policy is consistent with Atomic Energy Commission policy governing the release of magnetic media used to store "Restricted Data" and "Formerly Restricted Data." The policy and procedures outlined in this paper are not applicable to storage media on which COMSEC keying material has ever been recorded.

5. These procedures are applicable to magnetic storage devices only, and do not extend to non-magnetic storage devices such as storage tubes or semiconductor memories. It is recognized that these procedures will need modification to meet the additional requirements of future technological developments in the magnetic storage field.

POLICY

6. Magnetic storage media will be safeguarded in the manner prescribed for the highest classification and for all types of sensitive compartmented information

* The term "sensitive compartmented information" in this paper is used as defined in Director of Central Intelligence Directives No. 1/14 and No. 1/16.

recorded thereon until destruction of the media or until execution of the sanitization procedures contained herein.

7. Following execution of the procedures outlined below, magnetic storage media may be released from classified control and otherwise handled as unclassified. Prior to such release, however, appropriate procedures should be implemented to ensure that measures are taken to verify the efficacy of the sanitization procedures in each case. A record showing the disposition of the device or equipment should be maintained.

8. Magnetic storage devices which display features or malfunctions prohibiting the application of the sanitization procedures contained herein will be handled on a case-by-case basis considering the factors outlined in paragraph 15, below.

PROCEDURES

9. *Magnetic Tapes:* Tapes used to store magnetically recorded digital data are considered to be unclassified when processed on tape degaussers which have been tested and approved by a USIB member agency in accordance with the attached technical specifications and when the tapes are divested of markings identifying their previous use and classification. In using tape degaussers, care should be taken to ensure the continuing effectiveness of such equipments.

10. *Drums, Discs, Disc Packs and Other Rigid Magnetic Storage Devices:* Such rigid magnetic storage media previously used to store classified digital data may be handled as unclassified after sequential implementation of the following steps:

a. Determination that equipment malfunction will not prevent an effective overwrite of the medium;

b. When the capability exists, application of an AC or DC erase to all data tracks;

c. Execution of overwrite procedures as follows: All data bit locations will be set to zeros and successful entry of the pattern verified; then all locations will be set to ones and verification repeated. This overwrite (with verification) procedure will be executed alternately with zeros and ones three or more times, dependent upon the release consideration below;

d. Recording of unclassified data in all media storage locations.

11. *Inoperative Magnetic Drums, Discs, Disc Packs, and Other Rigid Magnetic Storage Devices:* If the storage device has failed in such a manner that it cannot be totally overwritten, e.g., abandoned tracks, the device may be declassified by exposing the recording surface(s) to a permanent magnet having a field strength at the recording surface of at least 1,500 oersted. Care must be taken to ensure that the entire surface is wiped at least three times by non-uniform motion of the magnet and that all tracks are covered by the center of the magnet. A thin sheet of clear plastic (from 1 to 5 mil) may be used to prevent damage to the recording surface.

12. *Magnetic Core:* Magnetic core memory may be declassified by alternately setting zeros and ones in all data bit locations for 1000 cycles in a manner analogous to that outlined in paragraph 10c, above. Internal memory units which display malfunctions that prohibit the application of these procedures will be handled on a case-by-case basis.

13. Thin Film and Plated Wire: Non-mechanical flat thin film and plated wire memories which have been used to store classified data may be declassified after recording unclassified data in all storage locations and allowing such data to remain on the device for 72 hours at temperatures matching or exceeding those extant during the period of classified storage. Other types of thin film memories must be handled on a case-by-case basis.

14. Magnetic Storage Media Used to Store Analog, Video, or Similar Non-Digital Information: Magnetic tape used to record analog, video, or similar types of non-digital information may be declassified by degaussing as in paragraph 9, above. Rigid magnetic storage surfaces may be declassified as in paragraph 10, above except that the unclassified overwriting signal must be analog instead of binary. The overwrite recording must be left intact on the device. In the case of a failure of the degausser or overwriting methods, a permanent magnet must be used as in paragraph 11, above for rigid recording devices.

RELEASE CONSIDERATIONS

15. Risk Factors: Determination of the ultimate disposition of any magnetic storage device, especially those which cannot be sanitized in accordance with the foregoing procedures, should take into account the full range of security implications. If residual information were to be extracted by an unauthorized entity, the actual loss should be assessed. This loss may be considerably less than the classification level of the data might imply due to conditions such as perishability, fragmentation, or possible downgrading. The following are factors for consideration in evaluating the degree of risk associated with the release of magnetic storage media:

a. *Percentage of Classified Data on the Device:* The risk factor is lower if the device contains a low percentage of classified material;

b. *Distribution of Data:* If the classified data on the device is scattered or fragmented, the risk factor is lower than if they are predictably located and concentrated;

c. *Dynamic Storage:* If the device has been used to store classified data in dynamic fashion, i.e., constantly changing in location, the risk factor is lower than when such data is regularly stored at the same address;

d. *Length of Storage Period:* The risk factor is lower when the classified data is stored in a given location for short bursts of time than when such storage is maintained for longer periods; in this context the risk factor becomes more acute when the storage period is defined in terms of hours rather than split-seconds with a 48-72 hour risk curve maximum;

e. *History of Mechanical Faults:* A storage device with a history of mechanical faults, e.g., malalignment of read/write heads increases the risk factor since the effectiveness of overwrite procedures is questionable. In such cases treatment of residual fragmentary data by magnetic saturation may be a worthwhile additional precaution, although this process involves a high level of special care.

MAGNETIC TAPE DEGAUSSER SPECIFICATIONS

1. **SCOPE.** This specification covers an equipment to be used for automatic bulk degaussing of recorded magnetic tape. It describes in general the desired configuration and sets forth desired electrical and magnetic performance.

2. REQUIREMENTS

2.1 General.

2.1.1 **Reel Size.** The equipment shall be designed to degauss magnetic tape in widths from 1 to 2 inches, wound on reels from 3 to 15 inches in diameter, with provision for conversion to either 5/16-inch hubs or computer reel hub dimensions. It will be permissible to turn over 2 inch reels for degaussing.

2.1.2 **Installation.** The equipment shall be designed such that either rack-mounting or bench top operation can be accommodated with minimum modification.

2.1.3 **Operation.** Operation shall be automatic once the reel is loaded and the degaussing cycle is initiated, except for 2 inch wide tape which may be cycled twice. The degaussing operation shall not require more than two minutes per reel.

2.1.4 **Degaussing Safeguard.** A method of monitoring the relative current in the degaussing coils shall be provided.

2.1.5 **Safeguard Tape Unwinding.** For vertically mounted degaussers, a method of reversing the direction of reel rotation while cycling will be provided. This reversal of reel direction must not interrupt the degaussing cycle. This safeguard prevents the unwinding of tape while cycling.

2.2 Detailed Requirements.

2.2.1 **Electrical Power.** The equipment must meet all requirements over the following parameter ranges.

2.2.1.1 **Input Voltage Range.** 95 to 135 VAC, single phase, three wire system.

2.2.1.2 **Line Frequency Range.** 48 to 62 cycles per second.

2.2.1.3 **Power.** The current drain shall be less than 20 amperes for any of the foregoing conditions of line frequency and voltage.

2.3 Mechanical.

2.3.1 **Cabinet.** The equipment shall be designed for mounting in a standard 19 inch rack and shall have minimum height and weight according to the design requirements.

2.3.2 **Finish.** Surfaces shall be adequately protected against corrosion within the environments detailed under section 2.4.

2.4 **Environmental Performance.** The equipment shall perform to specification when operated in the environments listed in the following paragraphs.

- 2.4.1 *Altitude.* Non-operating: sea level to 50,000 feet.
Operating: sea level to 10,000 feet.
- 2.4.2 *Relative Humidity.* Operating and non-operating: 5 to 100 percent, no condensation. However the equipment shall survive condensation after being dried out.
- 2.4.3 *Temperature.* Non-operating: -40° to 71°C
Operating: 0°C to $+55^{\circ}\text{C}$
- 2.4.4 *Vibration and Shock.* Non-operating: The equipment shall survive specified test methods which are intended to simulate shock and vibration levels expected in commercial shipping and handling.
- 2.5 *Performance.*
- 2.5.1 *Degaussing Level.* The residual signal level after degaussing shall be a minimum of 90db below saturated signal level for tape widths of 1 inch or less.
- 2.5.2 *Duty Cycle.* Design shall be such that continuous operation, i.e., a duty cycle of 100% may be used. Under conditions of continuous operation, the temperature rise at the reel face of the equipment shall not exceed 35°F above ambient.

3. TEST PROCEDURE

- 3.1 *Equipment.*
Recorder/Reproducer with full track $\frac{1}{4}$ " heads
Audio Oscillator
Wave Analyser with 20 hz. bandwidth
Oscilloscope
- 3.2 *Procedure.*
- 3.2.1 *Record.* Record tapes with a 400 hz. signal at $7\frac{1}{2}$ ips with the record level set for saturation.
Measure the playback signal level using the wave analyser on the 20 hz. bandwidth position and the recorder playback gain set at maximum. This is the reproduce reference level.
NOTE: The saturation point shall be defined by the tape transfer curve as the output level for which input levels L and 2L produce the same output. (See Figure 1.)
- 3.2.2 *Degaussing.* Degauss the tapes.
NOTE: To evaluate the ability to degauss wider tape widths two, three, and four inch reels can be taped together for the degaussing procedure. To simulate the larger diameter reels a special $15'' \times \frac{1}{4}''$ reel would have to be used. This can be constructed by interchanging a standard $\frac{1}{4}''$ hub and $15''$ flanges.
- 3.2.3 *Playback.* Playback the degaussed tapes with the playback gain set at maximum. Tune the wave analyser (20 hz. bandwidth) to measure any residual signal level.
NOTE: Clean and degauss tape recorder threading path before each pass.

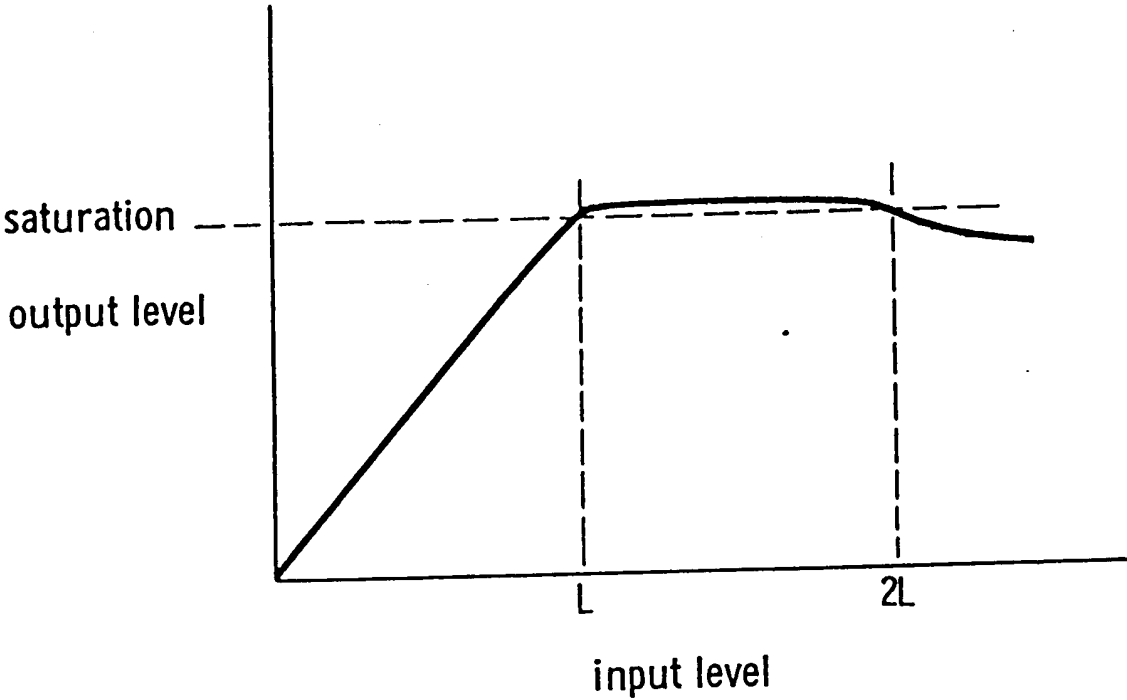


Figure 1